

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

H. CRISTINA CHEN-OSTER; LISA PARISI;
and SHANNA ORLICH, on behalf of
themselves and all others similarly situated,

Plaintiffs,

-against-

GOLDMAN, SACHS & CO. and THE
GOLDMAN SACHS GROUP, INC.,

Defendants.

No. 10 Civ. 6950 (AT) (JCF)

**MEMORANDUM IN OPPOSITION TO DEFENDANTS' MOTION TO
STRIKE REPORTS, OPINION, AND ANY TESTIMONY OF
PLAINTIFFS' EXPERT DR. HENRY S. FARBER**

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I. INTRODUCTION

Defendants Goldman, Sachs & Co. and The Goldman Sachs Group, Inc.'s ("Goldman's") motion to exclude the reports, opinion, and testimony of Plaintiffs' expert Dr. Henry S. Farber is meritless and should be denied. Dr. Farber, who is the Hughes-Rogers Professor of Economics at Princeton University, performed a sophisticated and comprehensive analysis of Goldman's performance evaluation, compensation and promotions systems using fully-specified multivariate regression modeling. Based on those studies, Dr. Farber concluded that putative class members at Goldman received statistically significantly lower scores on the firm's common, company-wide 360 Degree Review ("360 review") and Forced Ranking Process used by Goldman to set compensation and promotions. As a consequence, putative class members earned between 8 to 21% less than their male counterparts, with the 360 review and Force Ranking Process driving 50% of the observed compensation shortfall between male and female Associates (and 22% of the gap between male and female Vice Presidents). Female Vice Presidents were also promoted to Managing Director at a rate 23% lower than male Vice Presidents.

Goldman's response boils down a classic merits argument – that Dr. Farber should have disaggregated the data to the business unit level and should have added additional controls in the regression models – including, notably, the very performance measures that Plaintiffs are challenging as discriminatory in this case. The preparation of any expert statistical report invariably demands numerous choices about selecting, organizing, and analyzing data, and about choosing unbiased and stable variables to test. Because Dr. Farber advances valid and readily supportable reasons for the choices he made, and the study otherwise readily meets the standard of reliability demanded by Federal Rules of Evidence 702 and 703, there is no evidentiary

ground for striking his opinions. Thus, because Goldman's motion argument at most goes to the weight of Dr. Farber's report, the motion to strike and exclude Dr. Farber must be denied.

II. PRELIMINARY ISSUE ABOUT SCOPE OF GOLDMAN MOTION

Plaintiffs submitted Dr. Farber's report in support of Plaintiffs' motion for class certification ("Farber Class Certification Report") on May 19, 2014, with a filing on the public docket on July 1, 2014. (Dkt. 259.) Goldman's motion, though, attacks not only that report, but other rebuttal and sur-rebuttal reports (and deposition testimony) that have *not* been submitted or relied upon by Plaintiffs, including opinions prepared in response to defense expert Dr. Michael A. Ward (whose report has not been filed yet) and exchanged in discovery. Plaintiffs support Dr. Farber's rebuttal conclusions fully, of course, yet the pending motion does not present an appropriate vehicle for evaluating them. (Plaintiffs have proposed to Goldman that the motion be refiled to address the Farber Class Certification Report alone, but Goldman rejected this suggestion.) Instead, Goldman's motion only confuses the record—making it unclear which paragraphs from which reports are being challenged, and requiring Plaintiffs to respond to arguments about material that is not (and may never be) in evidence. Goldman's motion thus should be denied as to opinions other than those expressed in the Farber Class Certification Report, so that the briefing focuses on the expert testimony that is actually in evidence on this motion. (*See generally* July 1, 2014 letter to Judge James C. Francis from Plaintiffs' Counsel.)

III. THE FARBER REPORT

A. Dr. Farber's Credentials and Experience

Dr. Farber is the Hughes-Rogers Professor of Economics at Princeton University, where he has served on the faculty since 1991. *See* Brown Decl., Ex. 8 ("Farber Rep.") at ¶ 2. He previously served on the faculty of the Department of Economics of the Massachusetts Institute of Technology from 1977 through 1991. *Id.* He earned a Ph.D. in Economics from Princeton

University in 1977, a M.S. in Industrial and Labor Relations from Cornell University in 1974, and a B.S. in Economics from Rensselaer Polytechnic Institute in 1972. (*Id.*) He has a specialty in the field of labor economics (the analysis of wages, hours, employment, unemployment, labor unions, and other topics related to the workforce) and econometrics (the application of statistics to problems in economics). (*Id.*) Notably, Goldman does not challenge Dr. Farber's expert qualifications.

B. Dr. Faber's Statistical Analysis Demonstrates that Goldman's Uniform Policies and Procedures Disadvantage Women

As set forth in Plaintiffs' Motion for Class Certification (Dkt. 247), Plaintiffs contend that Goldman's uniform performance, compensation, and promotion policies and procedures have systematically disadvantaged female Associates and Vice Presidents across the Class divisions.¹ Dr. Farber analyzed Goldman's personnel and payroll data, and concluded that these uniform procedures disadvantage women at statistically significant levels, as follows.

1. Goldman's systems scored and ranked women lower than their male counterparts in the 360 review and Forced Ranking Process.

Throughout the class period and across the class divisions, female Associates and Vice Presidents at Goldman received lower scores than their male counterparts on the 360 review, and lower quartile placements in the Forced Ranking Process. Under a regression analysis, these differences are statistically significant after controlling for differences in background, experience, tenure, position, and other relevant variables. Specifically, female Associates were rated lower on the 360 review score at a statistically significant level of 4.47 standard deviations (across the 5-point system of years 2003-2009) (Farber Class Certification Report at Tab. R14)

¹ Although this has been and will be addressed in far greater detail in Plaintiffs' briefing in support of the Motion for Class Certification, Goldman's self-laudatory description of its personnel review, pay and promotion policies—which it takes as “undisputed” (Def. Mem. at 2–7)—is vigorously contested by Plaintiffs.

and 3.01 standard deviations (across the 9-point system of years 2010–2011) (*id.*). Female Vice Presidents were also rated lower on the 360 review at a statistically significant level of 5.15 standard deviations (years 2003–2009) (*id.* at Tab. 15) and 2.7 standard deviations (years 2010–2011) (*id.*).

Female Associates and Vice Presidents fare just as poorly in the Forced Ranking Process: Dr. Farber found that women are less likely to be ranked in the top quartile than their male counterparts. For the years 2003–2011, the regression analysis comparing employees with the same relevant characteristics reveals that Goldman systematically ranked male Associates in the top quartile more often than female Associates, at a statistically significant standard deviation of 4.84 (Farber Class Certification Report at Tab. 10). For the years 2003–2011, the regression analysis reveals that Goldman systematically ranked male Vice Presidents in the top quartile more often than female Vice Presidents, at a statistically significant standard deviation of 3.09 (*id.* at Tab. 11).

These results (and those reported in §§ II.B.2. and II.B.3, below) readily exceed the threshold of 1.96 standard deviations generally accepted to establish statistical significance on a *prima facie* case of discrimination. (Farber Class Certification Report at ¶ 43.) *See Smith v. Xerox Corp.*, 196 F.3d 358, 366 (2d Cir. 1999), *overruled on other grounds by Meacham v. Knolls Atomic Power Lab.*, 461 F.3d 134, 141 (2d Cir. 2006); *Malave v. Potter*, 320 F.3d 321, 327 (2d Cir. 2003) (citing Second Circuit authority on this point).

2. Goldman pays women substantially less than similarly situated men.

Dr. Farber found that Goldman pays female Associates and Vice Presidents materially less than their male counterparts and that the difference is statistically significant after adjusting for the relevant regression-controlled factors that make apples to apples comparisons possible.

In fact, Dr. Farber's statistical regression analysis shows that Goldman pays female Vice Presidents, on average, 21% less than it pays comparable male Vice Presidents, with a standard deviation of 9.88. (Farber Class Certification Report, Tab. 7.) Goldman pays its female Associates, on average, 8% less than it pays its comparable male Associates, with a standard deviation of 5.1. (*Id.* at Tab. 6.) The gender disparities in the 360 review and Forced Ranking Process contribute to the observed compensation disparities between female Associates and Vice Presidents and their male counterparts. Dr. Farber found that 50% of the observed compensation shortfall between female and male Associates and 22% of the observed compensation shortfall between female and male Vice Presidents is attributable to differences in how women and men are evaluated in the discriminatory and invalid 360 review and Forced Ranking Process. (*Id.* at ¶ 7(d).) The shortfalls are even more dramatic in light of the mean annualized earnings for men and women at Goldman during the Class period. (*Id.* at Tab. 4, 5.)

3. Prior to 2010, Goldman promoted women from Vice President to Managing Director less frequently than it promoted similarly-situated men.

The data also show that Goldman promoted relatively fewer women from Vice President to Managing Director. Dr. Farber's promotion analysis indicates that Goldman promoted female Vice Presidents to Managing Director at a statistically significantly lower rate than it promoted male Vice Presidents prior to the filing of this lawsuit. While Goldman made no promotions in 2009 and then promoted more women after this lawsuit was filed in 2010, during the period from 2004 (reflecting promotion decisions made starting in 2003) to 2008, Goldman failed to promote women from the Class divisions on the same basis that it promoted comparable men, to a statistically significant level of 2.59 standard deviations. (Farber Class Certification Report at ¶ 89.) Accordingly, 19 fewer women (amounting to 23%) were promoted between 2004 and 2008 than projected. (*Id.* at ¶ 7(f).)

IV. ARGUMENT

Dr. Farber's opinions amply satisfy the "exacting standards of reliability" demanded by Rule 702. *Weisgram v. Marley Co.*, 528 U.S. 440, 455 (2000). He used a recognized methodology (a fully specified, multivariate regression analysis), chose variables based on relevance, and produced the Farber Class Certification Report that easily meets any standard for admissibility of expert testimony. Defendants' objections do not detract from these fundamentals. The objections fall into three categories: (1) misapprehensions of Dr. Farber's analyses, (2) misinterpretation of the governing case law, and (3) disputes concerning the execution of the study that *at most* furnish grounds for Dr. Farber's cross-examination. None of these constitute grounds for exclusion.

A. Legal Standard

Rule 702 authorizes expert opinion evidence on the basis of "specialized knowledge," provided that it "will assist the trier of fact to understand the evidence or to determine a fact in issue." Fed. R. Evid. 702.² In the Supreme Court's leading authority, *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), courts are directed to apply a "liberal" standard for the admission of expert testimony to reduce barriers to the admission of scientific testimony. *Id.* at 588 (discussing the "liberal thrust of the Federal Rules and their general approach of relaxing the traditional barriers to 'opinion' testimony") (quotation marks omitted). *Daubert* cautions district courts not to overstep the jury's role, urging that "vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof," rather than exclusion, "are the traditional and appropriate means of attacking shaky but admissible evidence." *Id.* at 595. Exclusion of expert testimony is thus considered "the exception rather

² Although Goldman's notice of motion also cites Fed. R. Evid. 401, 402 and 403, it doesn't advance any argument separate from Rule 702.

than the rule.’” *Floyd v. City of New York*, 861 F. Supp. 2d 274, 287 (S.D.N.Y. 2012) (quoting the Adv. Comm. Notes to the 2000 Amendments to Rule 702). Thus, “[a]s the Second Circuit has noted, district courts should presume expert evidence is reliable.” *UMG Recordings, Inc. v. Lindor*, 531 F. Supp. 2d 453, 456 (E.D.N.Y. 2007) (citing *Borawick v. Shay*, 68 F.3d 597, 610 (2d Cir. 1995)).

The Second Circuit holds that Rule 702 embraces two factors: that “the expert is proposing to testify to (1) scientific knowledge that (2) will assist the trier of fact to understand or determine a fact or issue.” *In re U.S. Foodservice Inc. Pricing Litig.*, 729 F.3d 108, 129 n.12 (2d Cir. 2013). Judges have wide discretion to find that these factors are met. *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999). While Goldman attempts to construct multifactor tests for Rule 702 (Def. Mem. at 1–2, 7–8), cobbling together bits of language from different cases, Rule 702 resists any “definitive checklist or test.” *Daubert*, 509 U.S. at 593–94; *Kumho Tire*, 526 U.S. at 150.

Rule 702, moreover, envisions only “a *preliminary* assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue.” *Daubert*, 509 U.S. at 592–93 (emphasis added); accord *In re U.S. Foodservice Inc. Pricing Litig.*, 729 F.3d at 129–30 (admitting expert on class-certification damages issue); *Zerega Ave. Realty Corp. v. Hornbeck Offshore Transp., LLC*, 571 F.3d 206, 213–14 (2d Cir. 2009) (expounding on high bar required to find evidence unreliable).³ A court is authorized to exclude expert testimony only if it is

³ Rather than address the latest circuit authority under Rule 702, Goldman relies on older authority that is easily distinguished. In *Bickerstaff v. Vassar College*, 196 F.3d 435, 449 (2d Cir. 1999) (Def. Mem. at 2, n.7; 8–9), an expert report was excluded not merely “because it included less than all the relevant variables,” but “because it *omitted* the major variables” (emphasis

speculative, conjectural or based on assumptions that are “so unrealistic and contradictory as to suggest bad faith.” *Boucher v. U.S. Suzuki Motor Corp.*, 73 F.3d 18, 21 (2d Cir. 1996). “[O]ther contentions that the assumptions are unfounded go to the weight, not the admissibility, of the testimony.” *Id.* (citations and internal quotation marks omitted); *accord Arista Records LLC v. Lime Grp. LLC*, No. 06 Civ. 5936, 2011 WL 1674796, at *3 (S.D.N.Y. May 2, 2011).

Contrary to Defendants’ argument (Def. Mem. at 8 & n.19), this Circuit has yet to hold precisely how *Daubert* applies to experts proffered at the class certification stage. *In re U.S. Foodservice, Inc. Pricing Litig.*, 729 F.3d at 129 & n.13 (noting that language in *Dukes* and *Comcast* did not resolve issue). Courts in this District recognize that when a motion to exclude expert testimony is made at the class certification stage, the *Daubert* inquiry is “limited to whether or not the [expert reports] are admissible to establish the requirements of Rule 23.” *In re NYSE Specialists Sec. Litig.*, 260 F.R.D. 55, 66 (S.D.N.Y.2009); *accord Ge Dandong v. Pinnacle Performance Ltd.*, No. 10 Civ. 8086, 2013 WL 5658790, at *13 (S.D.N.Y. Oct. 17, 2013). Thus, “[t]he question is not . . . whether a jury at trial should be permitted to rely on [the expert’s] report to find facts as to liability, but rather whether [the Court] may utilize it in deciding whether the requisites of Rule 23 have been met.” *In re Visa Check/MasterMoney Antitrust Litig.*, 192 F.R.D. 68, 77 (S.D.N.Y. 2000), *aff’d*, 280 F.3d 124 (2d Cir. 2001); *accord Houser v. Pritzker*, No. 10 Civ. 03105, slip op. at *37 (S.D.N.Y. July 1, 2014) (“the Court need

added). In *Raskin v. Wyatt Co.*, 125 F.3d 55, 65–68 (2d Cir. 1997) (Def. Mem. at 9, n.20), the court excluded a report where the labor economist used an unrepresentative sample for his survey *and* made “no attempt to account for other possible causes” of disparity. In contrast to these cases, Dr. Farber has applied the relevant factors. The panel opinion in *Fisher v. Vassar College*, 70 F.3d 1420 (2d Cir. 1995), was superseded by an *en banc* opinion that omitted discussion of the expert (114 F.3d 1332 (2d Cir. 1997)), that in turn was abrogated by the Supreme Court (*Reeves v. Sanderson Plumbing Products, Inc.*, 530 U.S. 133, 148 (2000)). Finally, in *Ottaviani v. State University of New York at New Paltz*, 875 F.2d 365, 375 (2d Cir. 1989), the expert witness study, in spite of its alleged flaws, was in fact admitted into evidence.

not resolve such ‘battles of the experts’ at this juncture,” because the “question at this preliminary stage of the litigation is not whether the challenged hiring procedures actually had a disparate impact or were justified by business necessity, but merely whether those questions can be resolved on a classwide basis”).

Finally, disagreements about the relevant case facts go to the weight, not admissibility, of Rule 702 testimony. *Zerega Ave. Realty Corp.*, 571 F.3d at 213–14 (“[o]ther contentions that the assumptions are unfounded go to the weight, not the admissibility, of the testimony.”) (citation omitted); *MacDermid Printing Solutions, Inc. v. Cortron Corp.*, No. 08 Civ. 1649, 2014 WL 2616836, at *7 (D. Conn. June 12, 2014) (challenges to expert’s reliance on contested facts goes to the weight rather than admissibility of the expert’s testimony); *Allen v. Dairy Farmers of Am., Inc.*, No. 09 Civ. 230, 2014 WL 266290, at *5 (D. Vt. Jan. 23, 2014) (same); *Floyd*, 861 F. Supp. 2d at 290 (“When they cross-examine [the expert], defendants will surely challenge his opinions vigorously. But they may not prevent plaintiffs from presenting those opinions in the first place.”). Goldman appears to argue that an expert opinion must be based solely on Goldman’s view of the facts. (Def. Mem. at 7 and n.16.) But if this were the standard, the *Daubert* issues would merge with summary judgment on the merits, with the party opposing admissibility arguing that it proved the merits differently than the expert assumed. The only authority that Goldman cites, *General Electric Co. v. Joiner*, 522 U.S. 136, 144–45 (1997), does not support this position. It merely holds that a factual foundation for an expert report that is “far-removed” and “so dissimilar” from the record may constitute grounds for exclusion – far from the case here.

B. Dr. Farber's Regression Analysis Well Satisfies the Rule 702 Standard

1. Only major factors need be considered in a regression analysis.

The Supreme Court in *Bazemore v. Friday*, 478 U.S. 385 (1986) (per curiam), set out the authoritative standard for evaluating regression analysis in Title VII litigation. In *Bazemore*, black employees challenged their employer's use of a pay system that paid black employees less than white employees. The Fifth Circuit had held that the regression analyses of salary differences between these groups were "unacceptable as evidence of discrimination" because they failed to include "all measurable variables" thought to affect salary. *Id.* at 399–400. The Supreme Court reversed. Justice Brennan, in a concurrence joined by the entire Court, set forth the standard:

While the omission of variables from a regression analysis may render the analysis less probative than it otherwise might be, it can hardly be said, absent some other infirmity, that an analysis which accounts for the major factors must be considered unacceptable as evidence of discrimination. Normally, failure to include variables will affect the analysis' probativeness, not its admissibility.

Id. at 400 (citation and internal quotation marks omitted). The case law relied upon by Goldman is in accord. See *Bickerstaff v. Vassar Coll.*, 196 F.3d 435, 449 (2d Cir. 1999) (regression analysis barred not because it included "less than all the relevant variables," but because "it omitted the major variables"); *Sobel v. Yeshiva Univ.*, 839 F.2d 18, 34 (2d Cir. 1988) ("[w]e read *Bazemore* to require a defendant challenging the validity of a multiple regression analysis to make a showing that the factors it contends ought to have been included would weaken the showing of a salary disparity made by the analysis"), *cert. denied*, 490 U.S. 1105 (1989); *Freeland v. AT&T Corp.*, 238 F.R.D. 130, 148–49 (S.D.N.Y. 2006) (omission of two main variables without adequate explanation rendered regression analysis inadmissible). Thus, under Circuit authority, the relevant Rule 702 inquiry is not whether an expert omitted factors, but

“whether [regression] analysis is so incomplete as to be irrelevant or so misleading as to be unhelpful to the jury.” *Floyd*, 861 F. Supp. 2d at 289.

Dr. Farber’s models controlled for numerous characteristics that correlate to pay and promotion: differences between men and women in division, year, office, education, affirmative action plan (“AAP”) job group, experience at Goldman, experience at Goldman squared (both from the most recent hire date), relevant experience prior to most recent date at Goldman (including experience in prior employment spells at Goldman), relevant experience squared, whether a direct hire into the Associate or Vice President position and whether a direct hire into the Associate or Vice President position in the current year. (Farber Class Certification Report at ¶ 7(a).)

2. Dr. Farber properly rejected other factors suggested by Goldman.

Goldman cites four factors that Dr. Farber supposedly omitted from his reports: Business Unit, Production, Job Role and Function, and Performance. In each instance, though, Dr. Farber considered the factor and omitted it because it was tainted⁴ or otherwise unreliable.

The problem with regressing on factors in the employer’s control, such as the four categories Goldman identifies above (Def. Mem. at 10–16), is that it untethers the analysis from any objective, external benchmark. It operates from the premise that each of these categories is gender-neutral, even though this is the very question that the expert is attempting to analyze.

The decision of what factors to include is, as a general matter, subject to the expert’s professional judgment. *See, e.g., Duling v. Gristede’s Operating Corp.*, 267 F.R.D. 86, 92–93 (S.D.N.Y. 2010) (expert fairly discounted tainted variables); *In re Linerboard Antitrust Litig.*,

⁴ Variables found by the expert to be tainted by bias are properly disregarded in an expert analysis, as even Goldman’s own authority allows (Def. Mem. at 17–18, *citing Ottaviani*, 875 F.2d at 372–73).

497 F. Supp. 2d 666, 679 (E.D. Pa. 2007) (holding that witness was within his professional discretion to omit variables that were tainted or duplicative); *Gutierrez v. Johnson & Johnson*, No. 01 Civ. 5302, 2006 WL 3246605, at *5–6 (D.N.J. Nov. 6, 2006) (finding that “[i]t is only the rare case where the ‘regressions are so incomplete as to be irrelevant’ and the expert’s decisions regarding control variables are the basis to exclude the analysis,” and affirming that expert “exercised professional judgment in deciding what control variables to include in her analysis”) (citation omitted); *Arnold v. Cargill Inc.*, No. 01 Civ. 2086, 2006 WL 1716221, at *9 (D. Minn. Jun. 20, 2006) (“[expert’s] omission of performance evaluation and salary grade variables was deliberate and necessary because these variables are tainted by the same discrimination that is alleged to affect the other challenged practices”). To oppose admission of a regression analysis, a party may not simply point to variables not taken into account that might conceivably have affected the result. *Sobel*, 839 F.2d at 33–34. It must introduce evidence to support the contention that the missing factor can explain the disparities as a product of a legitimate, nondiscriminatory selection criterion. *Id.* at 34 (citing *Palmer v. Shultz*, 815 F.2d 84, 101 (D.C. Cir. 1987)). Goldman falls well short of its burden.

(a) Business Unit:

Dr. Farber concluded not to use this factor because Business Unit is a tainted, unstable, and unreliable variable, and therefore not usable in a common regression model. Dr. Michael Ward, Goldman’s expert, himself concluded that there was no formal classification of “business unit,” which he defined loosely as “a group of employees that are conducting generally the same area of financial activity.” Excerpts of Deposition of Michael P. Ward, Jan. 6, 2014 (“Ward Dep.”) at 61:2–6, attached hereto as Ex. A to the Declaration of Cara E. Greene in Support of

Plaintiffs' Opposition to Defendants' Motion to Strike Reports, Opinion, and Any Testimony of Plaintiffs' Expert Dr. Henry S. Farber ("Greene Decl.").

As Dr. Farber will describe in his report to be submitted with Plaintiffs' Reply Brief, Dr. Farber found Business Units to be unstable and inappropriate for study, as follows:

[A]ccording to Dr. Ward's data, there were as many as 227 business units in 2003 and as few as 94 in 2005. About 20 percent of business units that existed in one year did not exist one year later. Approximately 11 percent of Goldman Associates and Vice Presidents change business units in each year. As a result, business units do not appear to be measures of either inherent employee characteristics or job characteristics. Therefore, they are not appropriate adjustment factors for a study of pay discrimination.

(Brown Decl., Ex. 9, Farber Rebut. Rep. at ¶ 114.)

Dr. Ward's attempted studies on business units demonstrate why Dr. Farber's choice was correct. Many of the business unit groupings that Dr. Ward studies are too small and therefore have a large margin of error. (Brown Decl., Ex. 9, Farber Rebut. Rep. at ¶¶ 135–140; Greene Decl. Ex. B, Second Rebuttal Report of Henry S. Farber, May 19, 2014 ("Farber 2d Rebut. Rep.") at ¶¶ 5–7.) Accordingly, Dr. Ward's analysis suffers from a forest-vs-trees problem, "unable to detect a pay difference of [REDACTED] percentage points or smaller among Associates in half of his division/business unit/rank groupings" and "unable to detect a pay difference of [REDACTED] percentage points or smaller among Vice Presidents in at least half of his division/business unit/rank groupings[.]" (Greene Decl., Ex. B, Farber 2d Rebut. Rep. at ¶¶ 8–9.) If anything, Dr. Ward's study appears designed to avoid learning about the presence or absence of systemic discrimination. "By breaking the observations into such small groups [business units], Dr. Ward has constructed his analysis to have such large margins of error that if statistical evidence of systemic discrimination exists in these data, even evidence of substantial magnitude, it could not

be reliably detected by his tests.” (*Id.* at ¶ 14.⁵ *See also* Brown Decl., Ex. 9, Farber Rebut. Rep. at ¶ 140 (“Dr. Ward has constructed them in such a way that if statistical evidence of systemic discrimination exists in these data, it would not be detected by his tests because his tests have so little statistical power”).) Dr. Farber was correct to avoid introducing a business-unit factor.

(b) Production:

Dr. Farber excluded production as a tainted and unreliable variable because it is inconsistent in availability and meaning. Production is unreliable because of (1) “the lack of consistent data across the class and across divisions” and (2) “the inconsistent meaning of data across job groups.” (Brown Decl., Ex. 9, Farber Rebut. Rep. at ¶ 116.) Further, “[a] large number of employees lack productivity data and Dr. Ward did not study the percentage or number of employees without production data. In fact, there are no such data for employees in one of the three Divisions, IMD, and data are missing for 59 percent for employees in Securities and for 5 percent of employees in IBD. Dr. Ward did not, in fact, compare employees with the same production.” (*Id.* at ¶ 117.)

Again, Dr. Ward’s attempts to use this factor led to predictable difficulties. For example, while Dr. Ward did not analyze the percent of employees within the securities division (Greene Decl., Ex. A, Ward Dep. at 86:8–14), he testified that only about half of Vice Presidents in Securities Division even have production data, and far fewer Associates have production data

⁵ Goldman likewise proposes that a survey of performance ratings and compensation at the Business Unit level would show no pattern of gender bias, citing Dr. Ward’s surreply report. (Def. Mem. at 22 n.42, citing Brown Dep. Ex. 10.) Dr. Farber responded (Farber 2d Rebut. Rep. at ¶¶ 4–14) that because of the small sample sizes and correspondingly greater margins of error, Dr. Ward’s study would not reliably test for gender disparity. Goldman claims that the absence of gender bias is proven “simply by counting ‘plusses’ and ‘minuses’ based on Dr. Farber’s [sic] own results.” (Def. Mem. at 22 n.42.) Yet Goldman furnishes no basis under Rule 702 or otherwise for the reliability of such a “counting” exercise to test for gender bias.

(*id.* at 71:12–22). IMD does not have any quantifiable production data. (*Id.* at 96:8–10.)

Furthermore, Dr. Ward conceded that one of the supposedly “objective” measures of productivity (Sales Credits) might be “soft” or “hard,” meaning that it may be more or less difficult to generate commissions from particular clients. “Consequently, the number of sales credits or dollars associated with client accounts is not a reliable measure of performance. Dr. Ward also explained that there is not an exact relationship between Sales Credits or Dollars and the individual’s ‘contribution.’” (Brown Decl., Ex. 9, Farber Rebut. Rep. at ¶ 119.) Further complicating matters, some managers consider a “team environment” when allocating production credit, and even Goldman’s expert Dr. Ward admits he does not know how these production credits were allocated and to what extent these allocations reflect employees’ actual contributions. (Greene Decl., Ex. A, Ward Dep. at 173:23–174:25.)

(c) Job Role and Function:

While Goldman maintained information about job codes, the information itself was unreliable and not used by either expert in any of the analyses. Accordingly, Dr. Farber used the best available control for job function and role: Goldman’s own AAP Job Groups. The AAP Job Groups is “made available by Goldman to account for broad differences in the type of work performed. This classification system is described by the United States Department of Labor Code of Federal Regulations, Title 41 – Public Contracts and Property Management. §60-2.12(b) states: “In the job group analysis, jobs at the establishment with similar content, wage rates, and opportunities, must be combined to form job groups. Similarity of content refers to the duties and responsibilities of the job titles which make up the job group. Similarity of opportunities refers to training, transfers, promotions, pay, mobility, and other career enhancement opportunities offered by the jobs within the job group.” (Brown Decl., Ex. 9, Farber Rebut. Rep.

at ¶ 47). By using AAP Job Groups, Dr. Farber was relying on Goldman’s own classification of affirmative action job groups “that are broadly comparable in the dimensions that are relevant for the compensation analysis. Workers within a job group have been classified by Goldman to have similar duties, responsibilities, compensation opportunities, and promotion opportunities.” (*Id.* at ¶ 48.)⁶

(d) Performance rating:

Dr. Farber rejected the use of performance rating as a tainted and unreliable variable. (Notably, even when performance rating is accounted for, the data still shows negative results for women.) Dr. Farber found that “the issue of gender bias in the performance measures (360 review scores and quartiling) is central to the plaintiffs’ allegation of discrimination. As such, these performance measures are potentially tainted, and adjusting for differences between men and women in these measures could mask pay discrimination.” (Brown Decl., Ex. 9, Farber Rebut. Rep. at ¶ 50.) The 360 review has already been revealed as gender-biased in operation, so it was properly omitted.⁷

Dr. Farber determined that in a gender discrimination case, “measures of performance are potentially tainted variables whose inclusion in the analysis could lead to underestimating the true pay difference. That is, their inclusion in the statistical model may well reduce the estimated gender pay gap, not because women perform worse than men and earn less as a result but

⁶ Goldman contends that AAP Job Groups are irrelevant because they are overly general and the company did not use them for allocating pay or promotion opportunities. (Def. Mem. at 14–15.) Yet as Dr. Farber testified, to model using the company’s self-described job performance categories is problematic, given their lack of gender neutrality. Greene Decl., Ex. C, Excerpts of Deposition of Henry S. Farber, November 19, 2013 (“Farber Dep.”) at 216:6–25.

⁷ See GS0176436 (Dckt. 248-7) at 438 (“[O]ur women score differently on our performance review system than men do”); GS0204343 (Dckt. 248–8) at 344–349 (women rated differentially); GS0161489 (Dckt. 248-6) (complaint that men deliberately underrated woman co-worker); Cascio Report (Dckt. 259) at ¶¶ 37, 52–53, 73–74, 95–103.

because women of the same true performance level receive lower ratings and are paid less as a result.” (Brown Decl., Ex. 9, Farber Rebut. Rep. at ¶ 59; *see also id.* ¶¶ 60–84; Tab. R8–R19.)

This is confirmed by Dr. Cascio’s Class Certification Report, which criticizes the lack of validity and reliability in the performance review process.

Performance is also an unreliable variable in this case because “at least one of the performance measures [quartile and 360 review score] is missing for almost one quarter of the sample.” (Farber Class Certification Report at ¶¶ 50, 72.)⁸

C. Dr. Farber Conducted a Professional Analysis in All Aspects

Goldman challenges other aspects of Dr. Farber’s methods, such as delegating work to members of his team, and making executive decisions about which parts of the record required greater (or lesser) personal attention. Such activities, again, are par for any expert study. Because Goldman fails to establish how such choices supposedly rendered the results unreliable, once again they do not serve as a basis for exclusion of the study; they are, at most, cross-examination fodder. *See, e.g., Duling*, 267 F.R.D. at 95 (challenges to “various aspects of the experts’ procedures in conducting their statistical evaluations” concerned the “impact and weight of the alleged flaws” rather than the admissibility); *Wright v. Stern*, 450 F. Supp. 2d 335, 360 (S.D.N.Y. 2006) (admitting expert despite defendants’ objections that he “failed to review all relevant evidence before forming an opinion,” “summarized the evidence in an argumentative, one-sided manner,” and “failed to present evidence that is inconsistent with his own”).

⁸ Nonetheless, Dr. Farber did run a study using these factors, and discovered that there were still “pay differences between similar men and women of about 3 percent among Associates and 17 percent among Vice Presidents[.]” (Brown Decl., Ex. 9, Farber Rebut. Rep. at ¶ 7(e) These pay differences remained “statistically significant and reflect a difference in average pay between men and women with the same personal characteristics and jobs groups whose performance is the same according to Goldman’s measures of performance.” (*Id.*)

Goldman contends that Dr. Farber did not personally review the databases in raw form — and used his staff to pull data from the fields, instead of (presumably) doing these tasks himself. (Def. Mem. at 10.) All work by Dr. Farber’s staff was completed under his personal supervision and pursuant to his instructions. (See Brown Decl., Ex. 2, Farber Dep. at 77:18–24, Greene Decl., Ex. C, Farber Dep. at 114:18–23.) Goldman points to no authority under Rule 702, though, that requires an expert witness personally to carry out all research tasks. Delegation of tasks is normal and hardly disqualifies an expert from testifying. *See, e.g., Shell Trademark Mgmt. B.V. v. Warren Unilube, Inc.*, 765 F. Supp. 2d 884, 891–92 (S.D. Tex. 2011) (expert witness allowed even though he delegated training of interviewers and visits to interview sites to colleague); *Vision I Homeowners Ass’n, Inc. v. Aspen Specialty Ins. Co.*, No. 08 Civ. 81211, 2009 WL 5103606, at *2 (S.D. Fla. Dec. 28, 2009) (“[c]ourts routinely permit experts to rely upon assistants to carry [out] analyses that the expert designed”); *Ebbert v. Nassau Cnty.*, No. 05 Civ. 5445, 2008 WL 8086382, at *2 (E.D.N.Y. Sept. 29, 2008) (expert admitted over objection that she “delegated her analysis and review of documentation” to a colleague). There is no suggestion in the record that Dr. Farber blindly relied on staff, ignorant of the underlying information, or parroted the conclusions of non-testifying staff-members. Finally, Goldman’s motion does not point to any error or omission relating to Dr. Farber’s use of the databases, so at most, the argument is a meaningless hypothesis.⁹

⁹ Goldman also faults Dr. Farber for not personally reading every page of the Rule 30(b)(6) depositions that explained the compensation process. (Def. Mem. at 9.) The record shows that Dr. Farber identified the types of information that he needed to learn, and that he and his staff reviewed the relevant documents and testimony, including the entire deposition transcripts. (Greene Decl., Ex. C., Farber Dep. at 55:9–56:10, 64:20–66:19.) The extensive materials Dr. Farber and his staff reviewed and incorporated into his report are listed in the appendices. (Brown Decl., Ex. 9, Farber Rebut. Rep. at Appx. B.) Dr. Farber’s reports manifest that he comprehended the compensation and promotion systems that he studied. (Farber Class

Next, Goldman argues that Dr. Farber failed to identify the “particular organizational structure” used at Goldman for making decisions or the factors managers supposedly took into account in setting compensation. (Def. Mem. at 10.) As Dr. Farber explained in his Class Certification Report and at his deposition, employee compensation is set through a common, firm-wide process, involving divisional and firm-wide compensation committees. (Farber Class Certification Report ¶ 16; Greene Decl., Ex. C, Farber Dep. at 127:15–128:14.)

Goldman’s also complains that Dr. Farber did not study the different categories of employees and how their roles differ based on function or role. (Def. Mem. at 10.) Yet Dr. Farber’s models do control for characteristics that correlate to compensation: differences between men and women in division, year, office, education, affirmative action job group, experience at Goldman, experience at Goldman squared (both from the most recent hire date), relevant experience prior to most recent date at Goldman (including experience in prior employment spells at Goldman), relevant experience squared, whether a direct hire into the Associate or Vice President position and whether a direct hire into the Associate or Vice

Certification Report at ¶¶ 9-27; Brown Decl., Ex. 9, Farber Rebut. Rep. at ¶¶ 8–30.) Relatedly, Goldman complains that Dr. Farber did not review the Managing Director selection database. (Def. Mem. at 10.) Instead, Dr. Farber used the alternative HRIS database to track promotions, and Goldman again offers no explanation for why that choice makes the study unreliable. “Extracts from the PeopleSoft database contain (among other fields) data on the employee’s job history while being employed at Goldman, employee’s job title, gender, date of hire at Goldman, job code, job code description, date an employee became a Vice President, date an employee became a Participating or an Extended Managing Director, and changes in the employee’s status ‘Active,’ ‘Retired,’ ‘Terminated,’ ‘Leave of Absence,’ ‘Leave with Pay,’ or ‘Deceased,’ throughout the course of a fiscal year. The PeopleSoft data also provide information about an employee’s personal characteristics such as work experience prior to the current period of employment at Goldman, education, degree, degree description and the date the degree was granted. The PeopleSoft data indicate the type of leave an employee may have taken over the course of a year (FMLA, Maternity, Sick, Personal, Disability, etc.).” (Farber Class Certification Report at ¶ 26.)

President position in the current year. (Farber Class Certification Report at Tab. 3.) Goldman ultimately fails to demonstrate why having the granular information about job responsibilities would be material to Dr. Farber’s work, when such responsibilities are not captured reliably in the data and may themselves be tainted with bias. (Greene Decl., Ex. C, Farber Dep. at 215:15–216:25.) This is simply not a basis for exclusion.

D. Challenge to “Aggregated” Data Lacks Legal or Record Support

Goldman argues that Dr. Farber improperly “aggregated” compensation and promotion data across the organization, thereby compromising proof of commonality, Rule 23(a)(2).¹⁰ (Def. Mem. at 18–24.) Initially, Goldman overstates the case authority on this issue. Courts do *not* hold that pooling data is categorically unacceptable; indeed, courts “recognize[] that aggregate data can be more probative” under proper conditions than disaggregated data. *Ellis*, 285 F.R.D. at 522. Thus, in recent cases, courts have accepted the pooling of employees’ statistics where it fit the circumstances of the case. *See, e.g., In re High-Tech Emp. Antitrust Litig.*, No. 11 Civ. 2509, 2013 WL 5770992, at *41 (N.D. Cal. Oct. 24, 2013) (“[expert] averaging of the data appears to yield results that, in the context of the correlation and multiple regression analyses, are consistent with Plaintiffs’ theory that there is a somewhat rigid wage structure”); *Moore*, 926 F. Supp. 2d at 24–25 (pooling of several years’ data acceptable where “plaintiffs have provided sufficient evidence that the MPP process did not substantially change

¹⁰ This argument is popular among defendants — faced with damaging statistical results, they argue for *disaggregation* of data down to the lowest possible level, which serves (as a statistical artifact) to reduce the sample sizes below the threshold where they yield statistical significance. *See, e.g., Moore v. Napolitano*, 926 F. Supp. 2d 8, 25 (D.D.C. 2013) (criticizing the disaggregation of data to the level where sample sizes are too small to generate statistically significant evidence, which the court terms a “methodological misstep”) (*quoting Segar v. Smith*, 738 F.2d 1249, 1286 (D.C. Cir. 1984)); *Ellis v. Costco Wholesale Corp.*, 285 F.R.D. 492, 522 (N.D. Cal. 2012) (in “the tables [defense expert] Dr. Saad provides for each region, the number of promotions per year is so small per region that it would be difficult to attach much importance to the lack of statistical significance”).

over the class period”); *Ellis*, 285 F.R.D. at 522 (approving pooled data where separating data by region “would tend to obscure the overall pattern of promotion rates,” and “[c]ourts have recognized that aggregate data can be more probative in these circumstances”).

In cases cited by Goldman, measuring gender disparity across the organization was held inappropriate where the employer maintained numerous locations, each governed by its own decision-making process. Thus, in *Wal-Mart Stores, Inc. v. Dukes*, 131 S. Ct. 2541, 2555 (2011), the five-justice majority – which was ruling on the issue of commonality, *not* on the admissibility of expert testimony – disapproved pooling of data because it violated the plaintiffs’ own theory in that case that the store managers wielded delegated discretion void of a “specific employment practice.” *See also Tabor v. Hilti, Inc.*, 703 F.3d 1206, 1229 (10th Cir. 2013) (case involved hundreds of promotions, where decisions were “highly discretionary” and identified criteria were not maintained “in any uniform manner”); *Bolden v. Walsh Constr. Co.*, 688 F.3d 893, 896 (7th Cir. 2012) (commonality not established where 262 “sites had different superintendents, with different policies” and “materially different working conditions”).

Goldman does not argue that its administration of performance review, compensation and promotion dovetail the store-level model of *Dukes* or construction-site level of *Bolden*, such as might undermine Dr. Farber’s studies. (Even if credited, though, Goldman’s arguments once again present issues going to weight, not admissibility, and thus do not warrant exclusion. *Ellis*, 285 F.R.D. at 501.)

Here, Dr. Farber has a proper foundation for combining the data across divisions in his regressions. As will be clear in Dr. Farber’s Report to be submitted with Plaintiffs’ Reply brief (in which Dr. Farber will respond to Dr. Ward’s criticisms not yet filed), Dr. Farber examined Dr. Ward’s disaggregated models and found that gender pay differences were consistent across

Goldman divisions and across employees who were hired versus promoted into their positions. (Brown Decl., Ex. 9, Farber Rebut. Rep. at ¶ 123.) Dr. Ward's models yielded no evidence of statistically significantly different pay gaps among the five largest of Dr. Ward's groups of Associates (91% of all women included in Dr. Ward's regression analyses of Associates), nor among the 5 largest groups of his groups of Vice Presidents (92% of all women included in Dr. Ward's regression analyses of Vice Presidents). (*Id.* at ¶ 123.) Dr. Farber "concluded that the statistical evidence is consistent with there being a common pay difference across Ward's groups of Associates and across Ward's groups of Vice Presidents who are not [Private Wealth Advisors]." (*Id.* at ¶ 130–34.)¹¹ Dr. Farber concludes that "Dr. Ward's evidence [] is mostly consistent with there being a consistent pay gap across groups of Associates and across his groups of Vice Presidents." (*Id.* at ¶ 125.) Subdividing the data by lower subdivisions of Goldman and lateral/non-lateral hires reduces the data available for measurement of the effects at issue: the gender pay difference. Study of gender differences would not be improved or more reliable by subdividing the data as Dr. Ward does. Dr. Farber properly determined it would be inappropriate to disaggregate across divisions and lateral/non-lateral hires.

Finally, Goldman contends that Dr. Farber's analysis must pass Dr. Ward's Chow test – yet never actually explains why this is even relevant on a motion relating to admissibility. Dr. Ward's "Chow test" attempts to answer an entirely irrelevant question: whether, in the absence of a common mode of discrimination (like the delegation of authority to local managers in *Dukes v. Wal-Mart*), the magnitude and direction of the effects of all modeled factors (not just the challenged practices) are the same across the entire class. Here, there is a common mode of discrimination: the performance, compensation, and promotion systems challenged by Plaintiffs

¹¹ PWAs are paid largely on a commission basis.

(and studied by Dr. Farber). The other modeled factors do not measure injury (gender pay differences) and thus are unnecessary to support a finding of commonality at class certification involving common practices. Based on Dr. Farber's test, the use of pooled data was warranted and the Chow test is inappropriate.

V. CONCLUSION

For the reasons set forth above, Plaintiffs respectfully request that the Court deny Defendants' motion to strike or exclude Dr. Farber's report and testimony.

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Respectfully submitted,

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